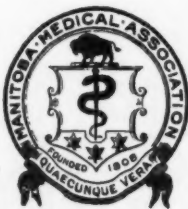


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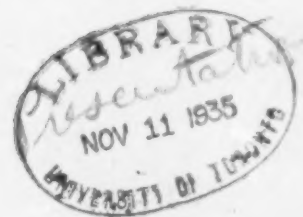
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# The Manitoba Medical Association Review

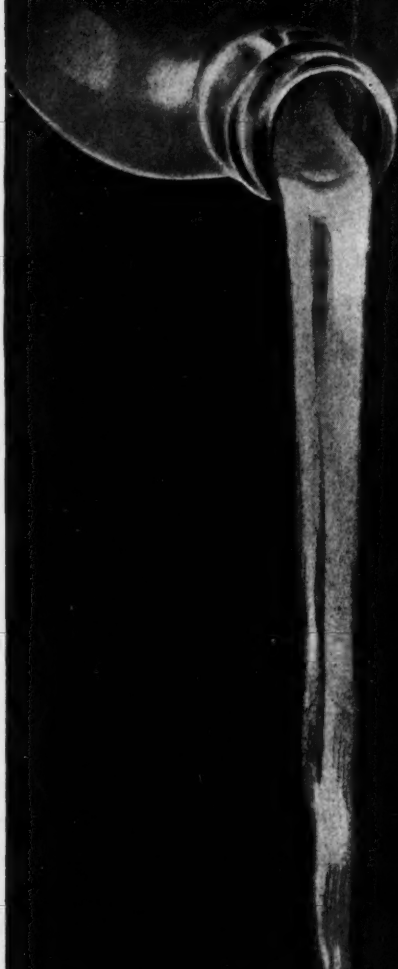


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November  
1935  
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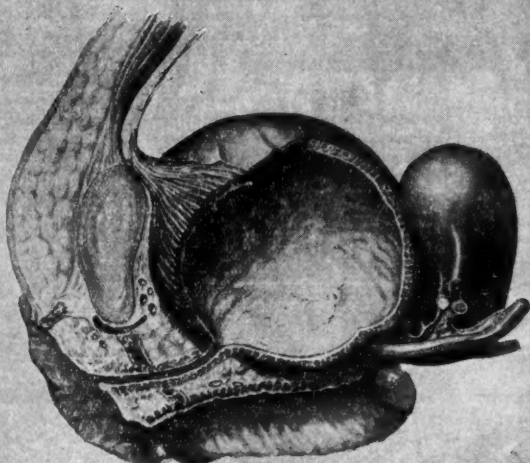
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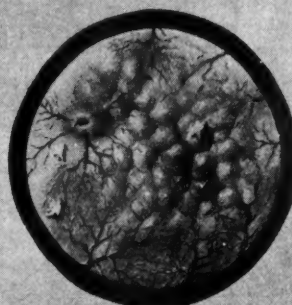
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★ **CYSTOSCOPIC VIEW OF CYSTITIS.** Note inflamed mucosa and dilated vessels, most marked in the trigone, mild bullous edema, and flakes of pus.



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## Clinical Section

### \*Diphtheria — Diagnosis

By

DOUGALD MCINTYRE, M.D. (Man).

*Assistant Superintendent, King George Hospital,  
Lecturer in Medicine, University of Manitoba.*

While the final diagnosis in a patient who is suspected of having diphtheria depends on the presence in the lesions of Klebs-Loeffler bacilli, it is seldom wise to await treatment until a culture can be made and examined. This entails a serious loss of time of at least twenty-four hours; and longer, in case the first swab is reported negative, as frequently happens.

Owing to the rapid progress of the disease, especially in the more severe types, it is always safer to make your diagnosis on clinical findings alone and give immediate treatment.

The more common manifestations of diphtheria seen are faucial, laryngeal, tracheo-bronchial, nasal, wound and skin lesions, and those on the genital organs; these latter are quite uncommon. I only recall having seen two cases; one in a girl about fifteen years of age, a vulvar diphtheria; and one boy about four years of age with diphtheria of the penis. One may see simple cases of each, or in combination with the other types.

The diagnosis of faucial diphtheria, as a rule, is not very difficult: A slight sore throat; little or no fever; small patches of membrane present on one or both tonsils. This in itself is enough to make you more than suspicious and to cause you to give immediate treatment. There are, however, several conditions which might be mistaken for this disease; the more common of these are—acute streptococcal tonsillitis, some cases of scarlet fever in which membrane is present on the throat, Vincent's angina, mumps, peri-tonsillar abscess, follicular tonsillitis and agranulocytic angina. Streptococcal tonsillitis is much more painful, temperature higher, and the membrane is much more fragile than is the case in diphtheria.

In scarlet fever, confusion is apt to occur when a diagnosis is made from an examination of the throat alone. Some of these cases have membrane on the tonsils, few of which are diphtheritic. An examination of the body will often disclose a well marked rash. Failure to discover the exanthem is very often due to the fact that the examination is made in poor illumination. It is, therefore, wise to have good light before fully making up your mind. *Vincent's Angina* may be recognized by the very marked fetor of the breath, by the ulceration of the tonsillar tissue underlying the membrane and the finding in the smear of Vincent's organisms.

Severe cases of diphtheria, especially those in which the submaxillary glands are markedly enlarged and diffuse swelling is present in the face and neck, are sometimes diagnosed mumps by the layman, and rarely by the physician. Differentiation is easy if a proper examination of the throat is made.

In peri-tonsillar abscess the membrane, if present, does not increase. Trismus is also a prominent symptom in quinsy, but absent in diphtheria. The two diseases are occasionally associated. Sometimes one sees the very severe cases of diphtheria diagnosed quinsy and the throat lanced; this is often disastrous. I would, therefore, say that if there is any doubt in your mind as to which disease you are dealing with, treat it as diphtheria. Antitoxin can do quinsy no harm, but lancing a diphtheritic throat may do incalculable damage.

Diphtheria in the beginning may assume a follicular appearance which quite rapidly coal-sces. Therefore, a throat which has remained follicular for several days can usually be considered non-diphtheritic.

In agranulocytic angina certain of its throat conditions may be mistaken for membrane. In this disease there is ulceration and gangrene of the mucous membrane with a marked tendency to spread; whereas in diphtheria the mucous membrane is not destroyed. The examination of the blood shows a very marked diminution of the leucocytes, with little or no change in the red blood cells.

For the past twenty years special emphasis has been placed on the prevention of the acute infectious diseases, and in none of these has greater success been obtained than in the uses of toxin-antitoxin and toxoid against diphtheria. This product gives immunity in from 90-95% of the cases in which it is used. There are those — 5-10% — in which immunity has not been obtained. In these a certain amount of danger lies. A physician is called to see one of these children, makes a diagnosis of diphtheria and advises treatment. The parent then objects and says: "My child has had toxoid; he surely can't have diphtheria." In this situation, one would insist on treating the case on the clinical diagnosis. We have seen a few quite severe attacks of diphtheria in patients who have had toxoid. This is not said as a criticism of toxoid immunization. A procedure that is as efficient as this particular one is, should I think, be almost above criticism.

The importance of an early diagnosis in all types of diphtheria is readily appreciated by every one. The early recognition of a case of laryngeal diphtheria is, if possible, more important. Very young children; that is, two years and younger, are apt to have broncho-pneumonia as a complication; this more often occurs when

\*Read at Post Graduate Course, Manitoba Medical College, September, 1935.

extreme dyspnoea has made it necessary to introduce a tube or do a tracheotomy. If, therefore, one can make a diagnosis on suspicions alone the prognosis is much improved and the necessity of doing a tracheotomy or intubation is averted.

Several conditions are mistaken for diphtheritic laryngitis. Among the more common of these are: Acute laryngitis, laryngismus stridulus, the laryngitis of measles, spasmodic croup, a foreign body, and certain types of polio-encephalitis. *Simple laryngitis* causes a disappearance of the voice with little or no interference with breathing. *Laryngismus stridulus* occurs in children under two years of age usually with rickets and causes no interference with the voice. *Measles laryngitis* may be ruled out by the failure to find Koplik's Spots in the buccal mucous membrane, or the absence of rash from the skin.

A foreign body in the larynx quickly causes complete obstruction or may, if the obstruction is only partial, cause pain and discomfort. The only sure way to rule this condition out is by a direct laryngoscopic examination, and x-rays of the larynx.

Patients with polio-encephalitis have occasionally been sent to the hospital with a diagnosis of laryngeal diphtheria. There is a good deal of justification in this as many of these patients have paralysis of the laryngeal muscles and a certain amount of interference with the voice sounds. The history of onset and the appearance of the chest—that is, lack of retraction, and examination of the spinal fluid, will readily rule out polio.

In the paralytic stage of diphtheria a diagnosis has sometimes to be made, and in this case poliomyelitis has to be ruled out. In both these diseases the muscles selected may be much the same. For instance—palatal paralysis, facial, muscles of deglutition and various other skeletal muscles may be involved. In diphtheritic paralysis a history of sore throat of about 3-5 weeks previously may be obtained. Paralysis in polio come on in about two days from the onset of the disease. In diphtheria the condition usually disappears in from 3-5 weeks, and leaves as a rule no residual paralysis. In polio some residual paralysis is usually left.

The bacteriological diagnosis of diphtheria is made either by examination of a direct smear or of an eighteen to twenty-four hour culture taken from the throat. The smear, if positive, is valuable; but if negative, does not necessarily rule out diphtheria. The swab is more reliable, but one must not be too ready to accept the verdict of one or even two negative cultures. We have in our experience taken several swabs from well marked clinical cases before obtaining a positive culture.

While the microscopic diagnosis in cultures taken from clinical cases of diphtheria of the throat can be made on morphological appearance alone, a more definite diagnosis can be made in the less common types of diphtheria and in the

case of carriers by means of the Virulence and "sugar fermentation tests." The virulence test is done by first obtaining a pure culture of the bacilli to be thus examined and injecting a guinea pig with an emulsion of this culture. If the culture is *Diphtheria Bacilli* it will kill the pig in from twelve to forty-eight hours; if it is the *Bacillus Hoffman* it will be harmless. In the fermentation test the diphtheria bacillus produces acid in glucose and galactose, but never in saccharose. *Hoffman's Bacillus* does not produce fermentation in any of these.

There are two or three points I wish to emphasize: 1st, That an early diagnosis in diphtheria on clinical grounds alone is essential; each hour of delay, especially in small children, is the loss of valuable time. 2, That no examination of a sick child is complete without a thorough investigation of its throat. 3, If you are suspicious enough of diphtheria to take a swab, be careful enough to give an appropriate dose of antitoxin.

### \*Treatment of Diphtheria

By

E. F. TAYLOR, M.D. (Man.)

Physician, King George Hospital,

Winnipeg.

There are, in the City of Winnipeg, parents, school teachers, nurses and physicians who are earnestly endeavouring to prevent Diphtheria yet the uncorrected death rate at the King George Hospital in 1934 was slightly over 3% showing there is still a great need for early recognition and early treatment.

It will be easier to follow, I think, if the different forms of the disease are treated separately.

Nasal Diphtheria is usually not toxic, the patient having a sero-sanguinous nasal discharge and no constitutional symptoms. Ten thousand units of Diphtheria antitoxin is administered intra-muscularly in the buttock. Rest in bed is advised for 24 to 48 hours or until after the effects of the administration has worn away and full diet according to age.

Occasionally Nasal Diphtheria is more virulent. The nasal discharge is profuse, the membrane can be seen in the nostrils and the infection has probably spread to the antra. Ten to twenty thousand units of Diphtheria antitoxin is given intra-muscularly and the rest in bed is prolonged to ten days. The diet consists of fluid and soft solids till the temperature is normal and then increased.

Laryngeal Diphtheria is not so toxic as Pharyngeal Diphtheria, the danger here being obstruction and pneumonia. Twenty to twenty-five thousand units of antitoxin administered intra-muscularly is sufficient.

\*Read at Post Graduate Course, Manitoba Medical College, September, 1935.



Rest may have to be considered before the giving of antitoxin. If the child has just ceased to breathe, if there is an imperceptible or running pulse with shallow respirations and pallor, or if the patient is cyanosed and retracting intubation is done immediately.

If, however, the color is normal with the pulse rate no more than 120, even though there is a moderate amount of retraction intubation depends on the history of the case.

With a history of difficulty in respiration for two hours or longer, intubation is done as it is thought that early intubation prevents pneumonia. If the retraction has been present for only an hour or two the child is placed in a steam room and carefully watched. Should he grow worse or fail to improve within the next few hours he is intubated.

A patient with a croupy cough, little or no retraction, and of normal color is treated with antitoxin and placed in a steam room. A steam room is simply a single room with a steam jet; the air being kept moist but not saturated.

Atropin given to reduce the oedema of the larynx has little or no effect.

The intubation tube can be removed generally in three or four days. Early removal of the tube is advised to prevent the formation of granulation tissue which may lead to obstruction and later to fibrosis and narrowing of the lumen. For the child who is nervous, and where spasm of the glottis is feared, 1/24 grain of morphine is given half an hour before extubation. Re-intubation may be necessary in all patients. For the private practitioner, intubation is useless and a tracheotomy is the operation of necessity. A patient with either should be under constant supervision.

The patient with Laryngeal Diphtheria is kept at rest for ten days when he is allowed to sit up in bed. He is allowed out of bed on the twelfth or fourteenth day.

The diet consists of fluids and soft solids till the temperature is normal. Occasionally there is the child who cannot swallow with the intubation tube in and nasal feeding is necessary.

The pharyngeal form of Diphtheria may be divided into two types—simple and malignant.

The membrane in the simple type may vary from a small spot or streak on one or both tonsils to both tonsils being covered with membrane. The amount of antitoxin given agrees with the amount of membrane present.

For the spot or streak on one or both tonsils, ten to fifteen thousand units of antitoxin is sufficient. An area of membrane the size of a five cent piece on one or both tonsils requires from twenty to twenty-five thousand units, thirty-five thousand units usually being enough when both tonsils are covered with membrane.

Complete rest in bed till the tenth or eighteenth day is needed and they are allowed out of bed on the twelfth to the twenty-first day.

The diet consists of fluids and soft solids till the membrane has disappeared and is then increased.

The malignant form presents an entirely different picture. Membrane may be present over both tonsils, the anterior pillars and soft palate. There is an intense oedema of the throat and one or both sides of the neck. Or there may be the intense oedema of neck and throat with only a thin grey film present on the latter, the patient dying before the disease is recognized.

The minimum dose of antitoxin used at the King George Hospital in this type is fifty thousand units. To the antitoxin, adrenalin 1-1000 is added in order to avoid shock. The adrenalin given is one and one-half the regular dosage. Ten to twenty-thousand units of the antitoxin is given intravenously, the remainder intramuscularly. Small children suffer more from shock than adults and for them the antitoxin given by the intravenous route is usually limited to ten thousand units.

The chill, following the administration of antitoxin intravenously, occurs in fifteen minutes to three-quarters of an hour and lasts from five to twenty minutes. The child, in the meantime, is placed between woollen blankets and surrounded with hot water bags. No further treatment is necessary for the chill.

Fomentations to the neck are only an added burden.

These patients are kept lying flat for at least five weeks, not even being allowed to feed themselves for the first ten days. Restraint and morphine in 1/24 grain doses may be necessary for restlessness. If myocarditis or paralysis occurs within the five week period, rest is prolonged to three months or more.

For the first few days, diet is a problem as these patients are nauseated and have difficulty in swallowing. Nasal feeding with 5% glucose can be attempted but discontinued if the patient struggles against it. Glucose intravenously can be safely given if the amount at one injection is no greater than 150 cubic centimetres. A 17% in normal saline solution is used to which has been added ten units of insulin. It is thought that this amount of insulin should be given subcutaneously for a week after the patient is able to take food per ora. When the membrane and nausea has disappeared, the diet is increased as in the other forms of Diphtheria.

Diphtheria of the conjunctiva is generally an extension or contamination from the nose and disappears with the antitoxin given for the original infection. Fomentations to the eye alleviate the pain.

For hemorrhagic Diphtheria, there is still no treatment. Antitoxin having no effect on the hemorrhage.

The sequelae and complications of Diphtheria are few.

It is necessary to speak of one that follows the treatment rather than the disease: this is the serum rash. This appears about the tenth day and may be a small area or may cover practically the whole of the body. For the small area applications of calomine lotion or a solution of soda bicarb applied frequently is enough. For the more extensive area, pituitrin l.c.c. or adrenalin 1-1000 solution dosage according to age is injected subcutaneously. Morphine may be necessary up to one-quarter of a grain in order to relieve the distress. These are repeated if the serum rash recurs.

Nephritis is rare and is treated as in general practice.

Pneumonia following laryngeal Diphtheria is also treated in the same manner.

Myocarditis needs at least three months' rest. Morphine 1/24 of a grain may be necessary to control restlessness.

When paralysis occurs the patient rests in bed until the muscles resume their normal function and when the palatine nerves are involved the patient may need to be nasal fed. It is when the nerves of the respiratory muscles are affected that the prognosis is grave. A Drinker Respirator might be of use but sedatives or stimulants appear to have little effect.

Acute otitis media is not frequent but when it does occur tends to become chronic. Dry cleaning or peroxide and alcohol are the local measures of treatment. Tonsillectomy and mastoidectomy may have to be performed in order to clear the Diphtheria bacilli.

Mastoiditis is rare but may be extensive. Mastoidectomy is performed as in mastoiditis following other infections.

The treatment of the carrier should be mentioned and here you are left to your own resources.

If the surgeons preceding you have been considerate enough to leave the tonsils and adenoids the removal of these will free the patient from bacilli in a large majority of the cases within ten days following the operation. One method that has been advocated was a course of toxoid, but the speaker did not say whether the bacilli disappeared one week after the first dose or three months after the last.

In closing, let me repeat that the treatment of Diphtheria is sufficient antitoxin, sufficient rest, and diet.

### **\*Control and Prevention of Diphtheria**

By

C. R. DONOVAN, M.D., D.P.H.

*Epidemiologist, Department of Health,  
Manitoba.*

The substance of the material presented here contains nothing really new about the control and prevention of diphtheria, being merely an outline

of the present status of certain preventive measures, and an indication of the problem which the disease presents.

#### **Mortality in 2-14 Age Group.**

A review of the decennium 1924-33 inclusive shows that diphtheria is the leading cause of death in the first four of these years, except one, when it was very close behind external causes. In 1928 it took third place as cause of death and from that time on the trend has been downward, until in 1933 it had fallen to sixth place. External causes and tuberculosis have continued to take either first or second place.

#### **Mortality in General—Manitoba.**

The decrease in deaths from diphtheria as shown in this age group corresponds, of course, to the general decline of the deaths from the disease in this province. In 1922 there was a death rate of 23.9 per 100,000 of the population, which from then on gradually declined to a low in 1933 of 2.8 per 100,000, but rose to 3.8 in 1934. Of the diseases made reportable by Board of Health regulation, diphtheria as a cause of death in 1934 was only topped by cancer, tuberculosis, influenza and whooping cough.

#### **Morbidity in Manitoba.**

The cases of diphtheria have also shown a fairly steady reduction in number since 1922, although the rate of fall during the past four or five years has not kept pace with the decline in the deaths, indicating a lessened expectancy of death from the disease. During the past three years there has been a slight annual increase in the number of cases in this province.

#### **Diphtheria in General.**

Such declines in both morbidity and mortality are not universal. Information from the League of Nations reports<sup>1</sup> states that diphtheria morbidity has been on the increase from 1926 to 1930 in most European countries. In Germany the morbidity increased rapidly during these same years, but showed a definite decline for the next two years, and raised again to a maximum of 74,000 cases in 1933, which represents a morbidity rate of 120 per 100,000 of the population. It is difficult to say whether this represents a significant trend in the curve of diphtheria, or is merely a cyclic variation. Some opinions are to the effect that there has been a massive drop in the recorded cases of the disease in most countries until 1920, that the morbidity has reached its lowest level, and to show any further reduction active immunization must be resorted to. The trend of the disease on the American Continent and in Scandinavian countries, where anti-diphtheritic vaccination is practiced on a large scale, seems to confirm this idea.

#### **Diphtheria Morbidity Manitoba, Canada, England and Wales.**

In England and Wales, where no widespread immunization programme has been undertaken,

<sup>1</sup>Read at Post Graduate Course, Manitoba Medical College, September, 1935.

the trend of morbidity has shown little indication of drop in the past twenty years, and the rate per 100,000 of the population is still about 125, while in Manitoba and Canada the trend has been steadily downward, and the present reported incidence of the disease is about 57 and 25 per 100,000 respectively.

#### **Comparison of Manitoba and Other Provinces.**

In spite of the favourable position which we seem to occupy as compared with other countries, this province, in relation to the other provinces of the Dominion, does not appear to be reducing its diphtheria morbidity during the last three or four years at the same rate which they have shown.

During the years 1931-1934 inclusive, Manitoba shows the greatest number of cases in each year per 100,000 of the population. The trend in other provinces has been downward, whereas that of Manitoba has remained practically stationary.

This, briefly, is the diphtheria problem, not looming so large as it did even fifteen years ago, but still with us.

#### **Economic Aspect.**

Before passing on, reference might be made to one aspect which usually receives very little consideration, that is, the economic side of communicable diseases. Of the 475 cases of diphtheria in Manitoba last year, 58 per cent. were treated in hospitals, and this number represented 21 per cent. of all the infectious diseases hospitalized, excluding venereal disease and tuberculosis, and means at least two dollars a day for every hospital day; antitoxin averages at least three dollars per patient; there is the cost of medical and nursing care; lost time at school and work and, most important of all, the loss of twenty-eight lives. It appears that the tangible and intangible loss to the community each year amounts to many thousands of dollars. If a fraction of this was annually expended in prevention there is every reason to believe that the disease could be reduced to and maintained as a negligible quantity.

#### **Diphtheria Control.**

The control and prevention of diphtheria was, until twelve or fifteen years ago, largely concerned with attempts to prevent the spread from cases or carriers, but it must be admitted, without very satisfactory results. The main factors to which attention was directed then as now, are the infected individual, the contacts and the environment, and their mention here appears superfluous. However, the following is the outline of the recently published recommendations of the Committee on Research and Standards of the American Public Health Association<sup>2</sup>: The first is the recognition of the disease and the handling of all clinical cases as actual diphtheria, even though throat swabs may be negative; also reporting the case as required by law. Second: Isolation of the patient until two cultures from the nose and throat, taken at least 24 hours apart are negative.

If these remain persistently positive a virulence test will indicate the necessity for continued isolation. Third: Concurrent disinfection of all articles which have been in contact with the patient and all articles soiled by discharges of the patient. Fourth: Terminal disinfection at the end of the illness by airing and sunning of the sick room after thorough cleaning or renovation. Fifth: Quarantine of all intimate contacts until shown by bacteriological examination not to be carriers. Passive immunization is rarely necessary for exposed persons over five years of age, for whose protection a daily examination by a physician or nurse suffices. Those children under five who are contacts of the disease need special consideration: for practical purposes they may all be considered susceptible, their secondary cases are two to three times more numerous than any of the other minor age groups, and their proportion of deaths is also higher; on the other hand, the horse serum containing the antitoxin, sensitizes the child to further injections of such serum, and the immunity conferred cannot be counted on to last beyond two weeks. The obvious solution would be active immunization at as early an age as possible. Then there is investigation of possible sources of infection, as unreported cases, carriers, or milk. Milk does not seem to be a very common channel of distribution, according to the reported milk-borne epidemics for eight years prior to 1932 in United States and Canada: Of the 678 epidemics, only 9 were diphtheria, and accounted for 230 cases.

Other general measures recommended by this Committee are active immunization of all children between the ages of six months and six years with a diphtheria toxoid and without previous Schick testing, and when older children and adults are being done to undertake the Schick and toxoid reaction test. Other authorities recommend nine months as the minimum for giving toxoid, and I think this has been generally followed in this country. The advisability of using the Schick test for children between the ages of seven and fifteen depends upon various factors. Experience has shown that the great majority of rural children from this age group are susceptible, and under ordinary circumstances it is not necessary to make use of the Schick test, while in handling children from this age group from urban centres, boarding schools, etc., the preliminary Schick test may be desirable, but certainly the older children and adults should all have a preliminary Schick and toxoid reaction test. If the patient is susceptible and the reaction test positive, toxoid should not be given in ordinary doses, but should be scaled down according to the size of the reaction; some even suggest that treatment of these individuals is not necessary as their response to antigen stimulus is unusually rapid and they quickly become immune.

Other suggestions are pasteurization of milk, and, of great importance, public health education which, developing a synergy between physicians and public, would enable the widest use to be made of the preventive measures at our command.



During recent years our attention has been directed mainly towards efforts to actively immunize the susceptible age group, using three doses of toxoid at intervals of three weeks, and although we are all impressed with the apparent benefits of the treatment, some specific evidence of this is indicated.

To evaluate the results of immunization by the injection of this material, one may either determine the antitoxic condition of their blood serum, investigate the statistics concerning the number of cases occurring in an immunized area as compared with a non-immunized area, or determine the number of cases which actually occurred among a susceptible portion of the population who have been treated, and compare this figure with an untreated portion of the same group.

#### Immunization in Toronto.

Such an investigation was undertaken in Toronto by members of the School of Hygiene in collaboration with the Toronto Department of Health, and for the figures given in the next few tables I am indebted to Dr. N. E. McKinnon<sup>3</sup>, Toronto.

TABLE No. 1  
REDUCTION OF DIPHTHERIA IN SCHOOL CHILDREN  
SUBSEQUENT TO TOXOID  
Toronto Schools - 1926-1930

| Dose Toxoid | *Estimated Cases | Actual | Percentage Reduction | Deaths |
|-------------|------------------|--------|----------------------|--------|
| 1 dose      | 34               | 24     | 29                   | 3      |
| 2 doses     | 200              | 52     | 74                   | 2      |
| 3 doses     | 222              | 23     | 90                   | 0      |

\*At rate in controls (school mates) corrected for age, monthly distribution and susceptibility.

Table No. 1 represents in summary the data gathered after immunization had been offered in Toronto schools in 1926. Here the inadequacy of one dose is at once apparent; the advantage of a second stimulus is evident in the much greater reduction of diphtheria, 74 per cent., in those given two doses of toxoid, but the superiority of the three doses shows clearly in the 90 per cent. reduction of cases, with no deaths, in the 16,829 children given three doses of toxoid.

The estimated reductions of diphtheria agree with the percentage of individuals showing one twenty-fifth of a unit of antitoxin per c.c. blood serum, as determined by actual titration after two and three doses of toxoid.

In 1930 this programme was renewed, and is still in progress. Table No. 2 gives an analysis of the data collected 1927-1932 regarding children given three doses of toxoid.

TABLE No. 2  
REDUCTION OF DIPHTHERIA IN IMMUNIZED\*  
CHILDREN  
Toronto Public Schools - 1927-1932

| Year    | † Estimated Cases | Actual | Percentage Reduction | Deaths |
|---------|-------------------|--------|----------------------|--------|
| 1927-28 | 25                | 1      | 96                   | 0      |
| 1928-29 | 84                | 7      | 92                   | 0      |

|         |     |    |    |   |
|---------|-----|----|----|---|
| 1929-30 | 113 | 15 | 87 | 0 |
| 1930-31 | 133 | 14 | 89 | 0 |
| 1931-32 | 105 | 3  | 97 | 0 |
| 1927-32 | 460 | 40 | 91 | 0 |

\* Given three doses of toxoid.

† At rates in controls corrected for age, monthly distribution and susceptibility.

The increment in 1930-31 was 14,091 children, and in 1931-32 it was 13,871; this group was therefore of considerable size. When the rates in the controls (school mates) corrected for age, monthly distribution and difference in susceptibility, are applied to those given three doses of toxoid, the estimated number of cases for 1930-31 is 133, the actual cases 14, a reduction of 89 per cent. For 1931-32 the number of estimated cases is 105, the actual 3, a reduction of 97 per cent., and for the two-year period, 238 and 17, a reduction of 93 per cent. For the five-year period from 1927 to 1932 the estimated number of cases is 460, the actual cases 40, a reduction of 91 per cent.: in these 40 cases there were no deaths.

Each group each year is not necessarily homogeneous in regard to immunity, as it contains children immunized in the respective year, some the year before and some the year previous to that.

To show the reduction in each year subsequent to immunization the totals on Tables 3 and 4 were prepared:

TABLE No. 3  
NUMBER IMMUNIZED\* AND UNDER OBSERVATION  
Toronto Public Schools - 1927-32

| 1927-28 | 1928-29 | 1929-30 | 1930-31 | 1931-32 |
|---------|---------|---------|---------|---------|
| 11,514  | 11,039  | 10,237  | 9,308   | 8,099   |
|         | 4,681   | 4,545   | 4,284   | 3,907   |
|         |         |         | 14,191  | 13,804  |
|         |         |         |         | 13,871  |
| (301)†  | (333)†  | (396)†  | (751)†  |         |
| 11,514  | 15,720  | 14,782  | 27,782  | 39,681  |

\* Given three doses of Toxoid.

The underlining indicates the number immunized each year.

† Pre-school children immunized previously arriving at 5 years of age in year indicated.

Table No. 3 shows the group immunized each year and its subsequent decrease by advancing the age annually, excluding the fifteen-year-olds. From the study, and adding a number of children immunized previously, but becoming five years of age at the time indicated and therefore included in the study, it is apparent that the various groups were of a size which might be considered sufficient to give reliable results under the usual conditions of diphtheria prevalence and represents a considerable portion of their school population of 90,000.

Table No. 4 shows the diphtheria expectancy, estimated by applying the rates on the unrelated controls, corrected for age, monthly distribution and difference in susceptibility, and the actual cases in each group each year.

TABLE No. 4  
DIPHTHERIA, ESTIMATED AND ACTUAL, IN  
IMMUNIZED\* CHILDREN  
Toronto Public Schools - 1927-1932

| 3 doses<br>Toxoid<br>in | 1927-28    | 1928-29    | 1929-30    | 1930-31    | 1931-32    |
|-------------------------|------------|------------|------------|------------|------------|
|                         | †Est. Act. | †Est. Act. | †Est. Act. | †Est. Act. | †Est. Act. |
| 1927-28                 | 25 1       | 63 7       | 76 11      | 67 11      | 31 0       |
| 1928-29                 |            | 21 0       | 37 4       | 32 0       | 14 0       |
| 1930-31                 |            |            |            | 34 3       | 47 3       |
| 1931-32                 |            |            |            |            | 13 0       |

† Given three doses of toxoid.

\* Cases estimated by applying rates in controls corrected for age, monthly distribution and susceptibility.

It is apparent in 1931-32, in spite of the relatively larger group, that the expectancy is smaller than previously, so we are confronted with the uncertainty of small numbers.

The percentage reductions shown in Table 5 are the greatest in 1930-31 and 31-32, but are more subject to correction than earlier estimates on account of the large numbers of children immunized in the later years by private physicians throughout the city. These children are included in the control group; any correction for them would give a higher number of estimated cases.

TABLE No. 5  
REDUCTION IN DIPHTHERIA SUBSEQUENT  
TO IMMUNIZATION\*  
Toronto Public Schools - 1927-1932

| 3 Doses<br>in | 1927-28 | 1928-29 | 1929-30 | 1930-31 | 1931-32 |
|---------------|---------|---------|---------|---------|---------|
| 1927-28       | 96      | 89      | 86      | 84      | 100     |
| 1928-29       |         | 100     | 89      | 100     | 100     |
| 1930-31       |         |         |         | 91      | 94      |
| 1931-32       |         |         |         |         | 100     |

\* 3 doses of toxoid.

The estimated reduction here suggests that immunity tends to be highest in the year in which toxoid is given and that in subsequent years there is a slight decline, but that the high level of approximately 85 to 90 per cent. efficiency in immunity is maintained for a period of four or five years at least is the outstanding finding in this analysis.

It is of real significance that there was not one death among the forty cases, and, in fact, to date there had not been a death in any of the 46,000 children given three doses of toxoid in Toronto.

The question of diagnosis in these recorded cases was considered: There was malaise, sore throat and fever in all cases; membrane was present in twenty-eight out of thirty-one, two showed "spots," and one was diagnosed as Vincent's Angina. These three gave positive swabs; the swabs from the "spots" were not tested for virulence, but that from the "Vincent's" case was positive. All but one of the forty cases gave positive swabs; of twenty-seven examined for virulence, twenty-six were positive. The diagnosis of diphtheria, and therefore, the occurrence

of diphtheria among treated children, must be accepted.

When the Toronto campaign started, diphtheria morbidity and mortality was very high; for ten years there had been very little reduction in morbidity; in 1926 there were over 1000 cases, with 90 deaths: a mortality rate of 16.2 per 100,000. At that time diphtheria was the chief cause of death in the age group of two to fourteen years of age. Under these conditions the campaign was initiated and the first comparisons made. In 1934 in Toronto, with a population of 630,000, there were 18 cases and, over a period of fifteen months—January, 1934, to March, 1935—there was not one death from diphtheria. This decline has occurred following fairly intensive immunization, and, considering the all too small decline in morbidity in the thirty years previous, and the established value of toxoid, it is not unreasonable to attribute, for the present at least, the larger part of the decline directly, or indirectly to immunization.

#### Immunization in Manitoba.

In Manitoba investigation of municipalities and areas which had undertaken community immunization by the end of 1933 shows that the cases reported in 1928 numbered about 140 per 100,000 of the population, but in 1934 this had dropped to 20 per 100,000, while the cases in the unimmunized territory have shown no tendency to decrease, each year the morbidity being usually between 40 and 50 per 100,000.

When plans were made in 1929 to stimulate interest in diphtheria immunization, the areas in which diphtheria was usually most prevalent were chosen, and this fact accounts for the difference in the rates of the two areas before immunization began in 1929.

Up to the end of 1933 eighty-nine municipalities out of the one hundred and seventy-four in the province had undertaken immunization, along with thirty school districts in unorganized territory. During this period sufficient toxoid was distributed by the Department to immunize, roughly, 75,000 individuals. As this work is undertaken very largely in the age group between two and fourteen, which numbers 193,000, it is evident that there is still considerable work to be done among these children.

#### One Dose Toxoid.

So far, the material used for immunization in this province has been plain toxoid, given in three doses at intervals of three weeks. For some time efforts have been made by workers, particularly in the United States, to develop an antigen which can be used, and give satisfactory results, in one dose or two doses, and in 1931 Glenny and Barr first discovered a method for the precipitation of diphtheria toxoid with potassium of aluminum sulphate. W. T. Harrison<sup>4</sup>, of the National Institute of Health at Washington, in the review of the results obtained by one dose of this material, states that there has been evidence that well over 90 per cent. of the Schick positive chil-



dren have been changed to Schick negative in three weeks, but some induration following injection in children has been elicited for as long as from six to eight weeks, and that this long continued antigenic action serves as a constant stimulation of the mechanism of antitoxin production, but also seems to produce in a few persons hypersensitiveness to the protein contained in a subsequent Schick test; reports of sterile abscesses following precipitated toxoid developing in from six to ten days after the injection, and there is increasing evidence that these reactions, frequently resulting in abscess formation, are more common than reports indicated.

These are some of the objections and advantages to the present use of this product, but the principal question that might be asked and is not mentioned in Harrison's observations is, how long does the immunity developed by alum toxoid last? The answer to this question appears to have been elicited in a discussion which took place at the combined meeting of the American and Canadian Medical Associations held in Atlantic City in June of this year, when investigations of D. T. Fraser, of Toronto, were quoted, which indicate why it is not yet advisable to change from the three-dose toxoid to the one-dose material:

A group of children originally with no antitoxin in their blood stream were given three doses of toxoid, and 91 per cent. developed more than one hundredth of a unit of antitoxin per c.e.; one year later, 91 per cent. still showed more than one hundredth of a unit per c.e. Of a similar group given one dose of alum precipitated toxoid only, 62 per cent. developed more than one hundredth of a unit per c.e., and after an interval of one year, but 19 per cent. showed that level. Although these groups were small, the differences are striking and fairly convincing.

As the level of antitoxin induced by the one-dose alum precipitated toxoid is this much less than that induced by the three doses of toxoid, the reduction in diphtheria may conceivably be correspondingly less. In a general way, this is borne out by other observers.

#### Diphtheria Carriers.

Although it is always considered that the actual cases of diphtheria are the great danger in spreading the disease, a certain number of cases undoubtedly arise from carriers. The carrier rate depends upon a host of known and unknown factors, but other things being equal, the rate should be directly proportional to the percentage of the population which is Schick immune. In practice it can be assumed that all carriers of virulent diphtheria bacilli have negative Schick reactions; on the other hand, those in whom the Schick reaction remains positive are susceptible to diphtheria and cannot harbour virulent diphtheria bacilli for any length of time without exhibiting symptoms of the disease. However, a Schick susceptible when attacked by a virulent diphtheria germ may become Schick immune so rapidly as to escape without noticeable symptoms. This phenomena is known as latent immunization,

which occurs more frequently than attacks of clinical diphtheria, and is more frequently developed in urban centres, or under conditions where large numbers of children are gathered together, such as in boarding schools, etc. It is easy to see that the greater the proportion of Schick immunes in a community, the greater will be the number of potential diphtheria carriers: this accounts for the well established observation that an anti-diphtheria campaign may be followed by no significant fall in the diphtheria rates, until over a certain percentage of the population has been immunized, and this also means that immunization must be followed up every year or two for the children who annually come into the susceptible age group. Three years ago it was shown that the incidence of diphtheria in all of ten American towns did not fall even after 50 per cent. of the school children had been immunized; directly 30 per cent. of the pre-school children had been protected, diphtheria practically disappeared<sup>5</sup>.

Every effort should be made to inoculate children as young as possible after the age of, say, nine months, as the disease is so much more fatal at the pre-school age, and for the same reason it is advisable to immunize all susceptible children in the same household.

In closing, may I reiterate the remarks of Dr. Alexander, Superintendent of the Municipal Hospital, in his 1934 annual report, when he states that "It was a tremendous disappointment to us to have so many cases of diphtheria since toxoid is a sure preventive for this disease, and the public has this fact proclaimed in magazines, newspapers, etc. It seems beyond comprehension that parents should so neglect their children and thus leave them a target for a disease so deadly, especially in childhood, and yet so easily preventable."

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## Editorial and Special Articles

### The Manitoba Medical Association Review

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### Hospital Section of the Winnipeg Medical Society

Minutes of a meeting of the Hospital Section of the Winnipeg Medical Society in the Medical Arts Club Rooms, on Monday, September 9th, 1935, at 6.30 o'clock.

Those present were:

Dr. F. D. McKenty, Chairman  
Dr. A. T. Mathers (by invitation)  
Dr. W. G. Beaton  
Dr. S. A. Boyd  
Dr. W. E. R. Coad  
Dr. A. Shubin  
Dr. A. Blondal  
Dr. C. R. Rice  
Dr. F. A. Benner  
Dr. Claude McRae  
Dr. H. Hershfield  
Dr. A. M. Goodwin.

The chairman opened the meeting with the following statement:

The purpose of this meeting, as announced in the notice, is to consider what, if anything, this Hospital Section can do to reinforce the material for clinical teaching in the Medical School.

We have been told that the available material has decreased so much that the lack of it is now embarrassing some of the departments, and

threatening to reflect seriously on the standing of the school. If such a thing should occur, it would be undoubtedly something of a disaster not simply to those engaged actively in teaching, but to everyone interested in maintaining the prestige of medicine here, and that should mean every member of the profession.

It must be recognized and remembered that teaching is a part of the Hippocratic oath to which everyone subscribes when he receives his degree. It is, moreover, a definite obligation on each member of the profession, from the fact that the determination of the scientific qualifications required for a license to practise medicine has, by the Medical Act, been entrusted to the medical profession by the Government. The maintenance of a high standard of medical education is thus obviously part of the licensing function. Even if the teaching of medicine is delegated to a special body the ultimate responsibility, together with the attendant credit or discredit, must be carried by the medical profession.

The prestige of the medical profession with the public, and eventually its material prosperity, depend in the last analysis upon the character of the service it renders to the community; and the quality of such service depends mainly upon the ethical and educational standards it maintains. To the Medical School has been delegated the direct responsibility of establishing these standards, and its position affords it, in addition, an immense opportunity of maintaining such standards in their every day application to medical practise. This is a function which it can perform more effectively than any other medical body. The Medical School could be an important factor in the daily life of the practitioner, a reliable source of help in the difficulties that are encountered, and an institution whose prestige should be a legitimate source of pride to every member.

The maintenance of high professional standards does not, of course, imply the production of graduates beyond the need of the community. Such a policy lowers rather than raises the standard of service. The relation held by a medical man to his patient is a trust and one in which the only safeguard of the patient's interest is the honor of the practitioner. It is recognized that the material stress and fear of want induced by over-competition is more than average human nature can be relied upon to endure in support of the extralegal standards of conduct which are expected of the medical profession as set forth in the Ethical Code. Both the ethical and scientific standards of medical service are lowered by such over-competition; witness the experience of certain countries where these conditions hold, and the social position of the medical profession in comparison with countries in which such conditions have been avoided. If such a condition of over-competition in medicine becomes established, some form of



supervision of the relations between the doctor and the patient is soon demanded as protection to the public; for instance, the regulations of the American College of Surgeons. Further, there are strong economic arguments for the view that where there is a constant demand for a standardized product, regulation of production can be of public benefit. The production of medical graduates falls fairly well within this definition.

The Medical Faculty has asked this hospital section to give what help it can in the present difficulty, and the section has been glad to respond as far as lies within its power. There are, however, some things to be said in this connection. The aim of the hospital section is to promote voluntary co-operation among its members. Inasmuch as there still appears to be some misunderstanding regarding this, it is necessary to make it unmistakably clear. No action beyond voluntary co-operation is within its sphere, no control is assumed over the strictly internal affairs of other medical bodies, and no responsibility can be accepted for them.

Voluntary co-operation, to be effective, implies an aim and course which commands the moral support of the majority. Lacking this, no policy can be made effective in a voluntary society. Free and frank discussion may be troublesome and time-consuming, but it seems an essential feature of representative institutions, and must be accommodated.

For these reasons I have called this meeting in order that Dr. Mathers, the Dean of Medicine, may have an opportunity to outline to us directly the needs of the school, and tell us to what extent our co-operation may be of help.

#### Re. Teaching Material.

Dr. Coad submitted a report of public cases which would have been suitable for teaching, which were available in St. Joseph's Hospital during the month of August, 1935. This report is as follows:

|                                      |    |
|--------------------------------------|----|
| Appendectomy .....                   | 25 |
| Carcinoma of the Breast .....        | 2  |
| Fracture of the Fibula .....         | 1  |
| Potts Fracture .....                 | 1  |
| Renal Colic .....                    | 1  |
| Ischeo Rectal Abscesses .....        | 3  |
| Fracture of Femur .....              | 1  |
| Fracture of the Rib .....            | 1  |
| Coles Fracture .....                 | 1  |
| Inguinal Hernia .....                | 1  |
| Femoral Hernia .....                 | 1  |
| Umbilical Hernia .....               | 1  |
| Hæmorrhoids — several cases .....    |    |
| Thyroidectomy .....                  | 3  |
| Angina Pectoris .....                | 1  |
| Dislocation of the Fingers .....     | 1  |
| Dislocation of Radius at Elbow ..... | 1  |
| Ventral Suspension .....             | 1  |
| Lipoma of Arm .....                  | 1  |
| Acute Cystitis .....                 | 1  |
| Ectopic Gestation .....              | 1  |
| Carcinoma of Cervix .....            | 2  |
| Concussion .....                     | 4  |
| Cardiac Decompensation .....         | 1  |
| Iodine Poisoning .....               | 1  |
| Pneumonia .....                      | 1  |
| Sarcoma of the Humerus .....         | 1  |

|                              |   |
|------------------------------|---|
| Cirrhosis of the Liver ..... | 1 |
| Taenia Solium .....          | 1 |

Dr. A. T. Mathers then spoke and stated he welcomed the opportunity to meet this group. The Medical School, he said, must be considered an instrument of public service in this community. The School is under an obligation to the public to provide the very best type of service possible, through the best possible type of graduate. "The School needs and desires the co-operation of the profession."

One of our problems during the past four years has been to co-ordinate the profession and the School. General and Special Post Graduate Courses have been held recently and practical articles by members of the Faculty appear regularly in the Review.

The School is part of a machine of which we are all a part; a machine designed to supply the public with the best possible service. With the trust placed by the public in the medical profession there goes an accompanying obligation to supply the highest grade of teaching and service that can be obtained. Revolution in the ranks is unthinkable. There is no antagonistic attitude within the faculty towards the general profession.

The original proposal to forego semi-public privileges was intended to apply to members of the teaching staff only. In some way this was misunderstood and held to apply to the entire staffs of the teaching hospitals. The School is in no way opposed to the aims of the general profession. The Faculty have been and will be fair, expecting fairness in return.

With regard to the effect of undue competition in medical practice I agree with Dr. McKenty that it does produce a definite deterioration of standards.

Re. reduction in the number of registrants. In the past five years there has been a gradual decrease in the number of students accepted into the Medical School. The graduation of physicians in excess of the country's needs is illogical and wasteful.

Dr. Coad's list of available teaching cases was very interesting, but it must be remembered that the problem of teaching in several hospitals is difficult. The suggestion has been made that an adjunct staff be established at such hospitals as have internes in training. Such staffs would do a limited amount of teaching as occasions arose.

I have been asked to give an estimate of the number of cases required for teaching purposes. I have not had time to prepare an accurate statement, but off-hand I would judge the following to be an approximate estimate:

|                                    |           |
|------------------------------------|-----------|
| Obstetrics .....                   | 150 cases |
| Medicine (3rd and 4th years) ..... | 300 cases |
| Surgery (3rd and 4th years) .....  | 300 cases |
| Other Departments in proportion.   |           |

I wish above all to correct any impression abroad that the aims of the School are in any



way in conflict with those of the general profession. Any remarks to the contrary are utterly unfounded.

Dr. W. G. Beaton thought our duty in this group was to co-operate with the Dean wherever possible and to accept and act upon suggestions he may make.

Dr. C. R. Rice asked how many members of the staff were present at the General Hospital meeting at which the proposal to abolish semi-public wards was accepted.

Dr. A. T. Mathers thought that approximately fifteen to twenty members were present.

Dr. F. A. Benner voiced his appreciation of the spirit of comradeship with which he, an outsider, had been accepted here and stated he felt as though he may have been a graduate of this school. He stated that no one could desire the school's welfare more than he. He also commended Dr. Mathers for his work in aiding the general profession and offered his assistance in any way possible.

Dr. Coad made a suggestion that a voluntary clinic be held each week, say on Saturday afternoon at the different hospitals covering any special interesting cases.

Dr. Mathers then thanked the group for the free discussion which had taken place, again voicing the thought that no split in the profession would be thought of. In reply to Dr. Coad's last suggestion, he stated that post-graduate teaching differs greatly from the under-graduate teaching. However, he thanked Dr. Coad for this constructive suggestion.

Dr. Beaton again voiced the thought that this section need do no more now until the proposal is tried out by members of the faculty.

Dr. Shubin asked if the proposed change in the semi-public wards would restore sufficient clinical material for teaching and Dr. Rice asked if it were true that 40% of semi-public patients are under the care of members of the teaching staff. He asked if this fact alone would not account for the dearth of clinical material.

Dr. Mathers admitted that this was undoubtedly an important factor.

The chairman, in closing, added the following remarks:—

It is clear from the trend of the discussion that the contribution that the Hospital Section can make towards solving the clinical difficulty can add considerably to the amount of teaching material, but also that there are rather serious drawbacks to its use because of the inconvenience of its location in different hospitals, the increased administrative difficulty of keeping track of and allotting it, and the possible embarrassments from a clinical teacher giving a demonstration on a patient under the care of another man. It would seem that these difficulties are not insuperable,

and that, with tact and consideration, they might be sufficiently overcome to make this material available if the other resources prove to be insufficient.

It is also clear that the Dean of Medicine may rely upon the earnest and continued support of the Hospital Section in the policy he has outlined.

## MINUTES OF EXECUTIVE MEETING

Minutes of a meeting of the Winnipeg members of the Executive of the Manitoba Medical Association, held in the Club Rooms of the Medical Arts Building on Thursday, October 3rd, 1935, at 12.30 noon.

### Present.

|                      |                    |
|----------------------|--------------------|
| Dr. A. S. Kobrinsky  | Dr. W. E. Campbell |
| Dr. D. C. Aikenhead  | Dr. J. C. McMillan |
| Dr. Wm. Creighton    | Dr. W. H. Secord   |
| Dr. F. G. McGuinness | Dr. W. E. R. Coad  |
| Dr. W. G. Campbell   | Dr. A. M. Goodwin  |
| Dr. E. S. Moorhead   | Dr. F. W. Jackson  |

The meeting was called to consider the report of Dr. A. M. Goodwin on Health Week.

### Health Week.

Dr. Goodwin gave a report on the negotiations to date and informed the Executive that apparently things were running along quite well. There were two or three matters, however, on which he wanted definite instructions. The first of these was in reference to the holding of a Baby Show. The Back-To-The-Land Assistance Association were very anxious to hold a Baby Show and Dr. Goodwin thought if it could be properly controlled it might be a real attraction to the Health Week.

It was moved by Dr. F. G. McGuinness, seconded by Dr. A. S. Kobrinsky: That the Executive would be in favor of the holding of a Baby Show providing it received the approval of the Pediatricians, and

Further providing that they take charge of the arrangements with the Back-To-The-Land Assistance Association. —Carried.

The next question brought up for discussion was that of the holding of a Beauty Show. The Secretary explained that it was the desire to hold a Beauty Show consisting of not more than twenty young ladies, these to be sponsored by various associations, such as, The T. Eaton Co. Limited, Hudson's Bay Company, etc. The thought of The-Back-To-The-Land Assistance Association was that the backing of the winner in this Show should depend not on beauty alone, but also on physical perfection.

After considerable discussion, it was moved by Dr. W. H. Secord, seconded by Dr. W. E. Campbell: That the Executive approve the holding of a Beauty Show. —Carried.

The question then came up in reference to examiners as to the physical well being of the entrants.

It was moved by Dr. F. A. Benner, seconded by Dr. W. E. R. Coad: That Doctors Black and Marlatt be appointed by the Association as the examiners for the entrants to the Beauty Contest.

The Secretary was then instructed to get in touch with the Dentists asking them to look after the examination of the teeth.

Dr. Goodwin advised that The Back-To-The-Land Assistance Association were very anxious to get a list of the lecturers and their addresses, for the Health Week. After considerable discussion, the following lecturers were chosen, and the names of the men to be asked to give lectures suggested:

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|------------------|---|
| Cancer Lecture   | Dr. W. Boyd or<br>Dr. D. Nicholson                  |
| Heart Disease    | Dr. E. W. Montgomery                                |
| Venereal Disease | Dr. S. C. Peterson                                  |
| Tuberculosis     | Dr. D. A. Stewart or<br>someone appointed by him    |
| Diet             | Dr. C. R. Gilmour or<br>someone appointed by him    |
| Child Hygiene    | To be appointed by<br>Dr. Bruce Chown               |
| Maternal Hygiene | Dr. O. Bjornson                                     |
| Appendicitis     | Dr. J. A. Gunn or someone<br>to be appointed by him |
| Care of Eyes     | Dr. W. Harvey Smith                                 |

There being twelve lectures in all required, it was suggested the Secretary get in touch with the Manitoba Dental Association and ask that they be responsible for two lectures on care of the teeth.

Dr. Goodwin then brought up the question of the Association obtaining a booth, and it was moved by Dr. A. S. Kobrinsky, seconded by Dr. F. A. Benner: That the question of a booth for the Association be left to Dr. Goodwin and his committee.

It was further moved by Dr. W. E. Campbell, seconded by Dr. W. E. R. Coad: That the Health Week Committee be authorized to expend up to the cost of two booths for putting on an exhibit, if they so saw fit.

**Report of Ceremonies of C.M.A.**

The memorandum submitted to Dr. E. S. Moorhead by the Associate Secretary of the Canadian Medical Association was then read to the members of the Executive present, and it was generally considered that the new ritual suggested would be quite in order.

There was some discussion, however, as to how the President-Elect should be appointed, and it was moved by Dr. W. G. Campbell, seconded by Dr. W. E. R. Coad: That in the opinion of the Executive the nomination for the President-Elect should be made by the Provincial Association in the Province in which the next Annual Meeting is to be held, and

That this be the sole requirement in reference to nomination and election of the President-Elect.

The Secretary was instructed to hand to Dr. Moorhead a copy of this resolution. —Carried.

There being no further business, the meeting then adjourned.

**WINNIPEG MEDICAL SOCIETY**

The regular monthly meeting of the Winnipeg Medical Society was held in the Physiology Lecture Theatre of the Medical College on Friday, Oct. 18th, at 8.15 p.m.

The programme was as follows:

1. "The Obstetrical Significance of Intra-Cranial Injury of the Newborn"—Based on a review of 200 autopsies.  
—Dr. Fred G. McGuinness.
2. Clinical Presentation—"Post-traumatic Neurosis."  
—Dr. Gilbert L. Adamson.  
—Dr. Oliver S. Waugh.

Dr. L. B. Wilmot, a native of New Brunswick and graduate of McGill University, who had practised successively at Roblin, Man., Qu'Appelle, Sask., Stonewall, Man., and Winnipeg, died on October 17th, at the age of 62. For many years he played an active part in the affairs of the Conservative party. His hobby was bee keeping. He is survived by his wife and two daughters, who reside in Winnipeg.

## Department of Health and Public Welfare

### NEWS ITEMS

#### THE REDUCTION OF MORBIDITY IN VENEREAL DISEASES

S. C. Peterson, M.D. (Man.)

The following is a copy of the first portion of a report on "The Reduction of Morbidity in Venereal Diseases" by Dr. S. C. Peterson. The report will be divided into three sections, the next two appearing in subsequent issues of "News Items".

Morbidity is defined as the number of individuals suffering from disease or the results of disease in proportion to the general population.

I intend to discuss my subject under two main headings:

First,—the education of morbidity by the lessening of the incidence of infection; and

Second,—reduction of the number of individuals suffering from the disease by the prevention of chronicity and the avoidance of complications in those already infected.

I shall begin my talk by reading a few remarks of Dr. W. L. Munson from a recent article in the American Journal of Public Health. He says:

"Any communicable disease is entitled to the amount of attention that its prevalence and harmfulness to the human race demands. I need not tell you what the magnitude of the problem is which syphilis and gonorrhoea present. Estimates and figures vary but these diseases are well up in the list of morbidity and mortality. We all know that they rank high as destroyers of human happiness. I wonder if they have not frustrated as many careers as some of the other diseases to which we give more attention. Surely the misery and anxiety which they cause, taken with the financial cost for both early and late treatment and institutional care, make the problem of their abatement one of paramount importance."

There are six separate and distinct diseases now classified as venereal. They are Gonorrhoea, Syphilis, Chancroid, Balanitis Gangrenosa, Granuloma Inguinal, Lympho-granuloma Inguinale. The first two, Gonorrhoea and Syphilis, are by far the more prevalent and my remarks will be directed largely toward them.

What then is the incidence of these particular diseases as seen today? I shall have to give the figures from the United States as there are no statistics available as to venereal diseases in Canada. The figures here are, however, doubtless proportional to the population. Estimates indicate that each year approximately 1,100,000 patients with fresh venereal infections seek treatment in the United States; that is about 432,000 persons with early syphilis and 679,000 persons with acute gonorrhoea seek treatment annually. This estimate of the incidence of syphilis and gonorrhoea is obviously the minimum because at least half of the infected individuals fail to seek treatment until after their infection reaches medical care. Neither of these groups is included in the figures given. Only 1 case in 3 of these new cases is reported to the authorized Health Departments. Both diseases are increasing, not decreasing, on this continent.

Probably an average of 1 out of every 20 people in the general population has syphilis, and two or three times as many have gonorrhoea. This large number of persons with syphilis or gonorrhoea under medical care, day by day, makes these diseases the most prevalent of the reportable infections in the country. Fifteen per cent. of the blind have syphilis of the eyes, and many more are blind because of

gonorrhoea. Ten per cent. of the admissions to mental hospitals have some form of syphilis of the central nervous system, fifteen to twenty per cent. of serious heart and blood vessel conditions are caused by syphilis.

It is estimated that in the United States annually, approximately 100,000 deaths, including still births, are attributable to syphilis alone.

The belief that these infections may be contracted only through the medium of sexual intercourse is a fallacy; as a result of this misunderstanding, modest and respectable people hesitate to discuss them. Venereal diseases should be considered as being like other diseases which are being freely discussed and intelligently combated by every possible means. Probably a third of all cases are contracted by means other than sexual contact or are transmitted through the perfectly legitimate relations of husband and wife.

Nature does not take into consideration the manner in which the infection was contracted. She fans the spark to the same flame whether the diseased person is a saint or the blackest sinner, an innocent baby, or the vilest prostitute or profligate. There can be but one reasonable attitude toward venereal disease. It is a dangerous scourge which must be plucked out root and branch. As long as there are persons moving about with venereal disease in the infectious stages, everyone is in danger.

Venereal diseases are rooted in the most fundamental of the instincts. In order that they might be entirely eradicated, it would be necessary to upturn the whole of society. Problems of education, economics, ethics, religion, sociology, inheritance, environment, law enforcement, customs, and a dozen other relations, are here entangled in such a maze as is probably not equalled anywhere else.

One cannot long be interested in these diseases without recognizing the importance in the broader sense, of all the problems grouped under the general heading of "Social Hygiene." Parney says "The whole problem of venereal disease is so complicated by elements of prejudice, tradition, sentiment, false modesty and certain conventional religious attitudes that its solution has, in the past, baffled the sporadic efforts of social workers." There are so many taboos connected with the sex impulse that sex education in any way is difficult of attainment. The sex impulse has been wantonly commercialized for profit. The War removed many restrictions and inhibitions. The sexes co-mingle freer than ever before, and both consume larger amounts of alcohol. Unemployment and idleness are general, and time hangs heavily on the hands of too many people. These are all doubtless potent causes of promiscuous sexual intercourse. Here is a quotation from a recent article by Colonel Harrison of London, Adviser on Venereal Diseases to the British Government. He says:

"Efforts to reduce promiscuous intercourse do not fall within my province and I will say only that in my experience the two most powerful incentives to it are boredom, and the extra ounce of alcohol, drunk usually on some special occasion over and above the normal intake. In the armed forces I am sure that the provision of healthy recreation has done much to reduce the incidence of venereal disease. With the provision of recreation goes education, which promotes a wider interest in affairs, and is consequently a means of preventing boredom."

He says further: "I expect to be told that all the recreation, and all the education in the world, does not prevent extra marital intercourse. This is true, but such things do reduce it, and there would be very little work for the venereal specialist if it depended



on the result of lapses by healthy, normally tempered men with a taste for exercise, and sufficiently educated to be interested in a variety of things other than wine, women and song."

Slum conditions and over-crowding must also be considered in the study of the causes in the spread of venereal diseases. Not long ago Dr. Corrigan, in the Out-Patient Department of this Hospital, was struck by the number of venereal disease cases that originated in three definite areas of slums and overcrowded tenements in this city.

These diseases must be dragged out into the open. They must be regarded as are other communicable diseases, and it must be recognized that they are jointly the greatest plague that afflicts mankind today. Let us try to control their incidence by education, sane morality, better living conditions, by the assumption of a greater moral responsibility by Governments, and by the medical profession, and by prompt treatment of those already infected.

Public Health officials have been greatly handicapped by lack of media for the dissemination of information in regard to venereal diseases to the general public. Through the aid of suitable publicity, scientifically accurate preventive measures have attained a large degree of usefulness in a relatively few years. Public instruction has served as a vehicle upon which disease control measures have ridden to wider and more speedy effectiveness. The campaign against smallpox, typhoid, diphtheria, and tuberculosis, are now well advanced. The more recent campaigns against poliomyelitis, encephalitis, scarlet fever, and what bids fair to be the most intensive of all, the drive against cancer, have been or will be assisted by full publicity. The only program of disease control which, presumably, will not be accorded wide publicity is that directed against the venereal diseases. This fact was forcibly brought to the attention of Public Health workers recently when officials of one of the great Radio Companies declared a speech prepared by a leading exponent of preventive medicine, unsuitable for broadcasting because syphilis was mentioned.

That great avenue of publicity, the press, is also closed to the furtherance of methods, designed to control the spread of these diseases. It is indeed rare for the words "syphilis" or "gonorrhoea" to get past the proof reader. The medical profession could do a great deal to help overcome the prejudice against the dissemination of information concerning syphilis and gonorrhoea, which is at present in the position of giving offence and hence is denied access to the necessary avenues of publicity.

I was talking to Dr. Paul O'Leary at the Mayo Clinic a few weeks ago. He told me a story which further illustrates this difficulty. A popular lecture to the general public is given every two weeks by some member of the staff of the Clinic. Dr. O'Leary chose "syphilis" as the subject of his lecture, one night last winter. He told me that after the lecture a very dignified, dapper-looking middle-aged man came up to the platform and asked him if he was not ashamed of himself for talking about such a subject before a lay audience, particularly a mixed audience. He said further, that if Dr. O'Leary had had the effrontery to give a lecture like that in Toronto, where he came from, he would be tarred and feathered and run out of town. You can suit yourself as to whether the joke is on Dr. O'Leary or Toronto.

The Department of Health and Public Welfare of Manitoba is quite alive to the seriousness of Venereal Diseases and is doing everything in its power to handle the situation. Funds at their disposal are, however, grossly inadequate.

The matter of the teaching of venereal diseases in the Medical Schools has been sadly neglected in the past. Recently, however, these subjects have been given a more rightful representation in the curricula of the leading Medical Schools, an average of 30 hours per semester are now being devoted to their study, but

more time would be required to do them justice, particularly when we remember the dicta of some of the leaders of our profession as to the importance of syphilis in general medicine.

## COMMUNICABLE DISEASES REPORTED

Urban and Rural - September, 1935

Occurring in the Municipalities of:—

**Mumps:** Total 102—Winnipeg 55, St. Boniface 27, Kildonan East 5, Kildonan West 5, Rosser 2, Franklin 2, Ethelbert 2, Brandon 1, North Norfolk 1, The Pas 1, Unorganized 1.

**Whooping Cough:** Total 102—Winnipeg 26, Hamiota Village 12, Ham. Rural 11, Flin Flon 7, St. Boniface 7, Cornwallis 6, Kildonan West 5, Russell Town 5, Edward 3, Brandon 2, Dauphin Town 2, Fort Garry 2, Kildonan East 2, Portage City 1, Rosser 1, Shellmouth 1, Unorganized 1. Late reported, July: Hanover 1; August: Flin Flon 7).

**Scarlet Fever:** Total 83—Winnipeg 40, Flin Flon 7, St. Boniface 6, Unorganized 6, Whitewater 3, Rosser 3, Transcona 2, St. Vital 1, St. James 1, Silver Creek 1, Russell Rural 1, Portage City 1, Plum Coulee 1, Morden 1, Minitonas 1, Franklin 1, Charleswood 1, Blanchard 1, Argyle 1. Late reported, July: Rhineland 1; August: Flin Flon 1; Franklin 2).

**Chickenpox:** Total 78—Winnipeg 43, Brandon 18, Whitewater 10, Edward 2, Kildonan West 2, St. James 2, Brooklands 1.

**Tuberculosis:** Total 39—Winnipeg 9, Unorganized 9, Bifrost 2, McCreary 2, St. Andrews 2, Brandon 1, De Salaberry 1, Eriksdale 1, Flin Flon 1, Gilbert Plains Rural 1, Grey 1, Hanover 1, Kildonan East 1, Killarney Town 1, Morris Rural 1, Piney 1, Selkirk 1, Siglunes 1, Strathclair 1, St. Boniface 1.

**Diphtheria:** Total 19—Winnipeg 10, Boulton 1, De Salaberry 1, Fort Garry 1, Hanover 1, Kildonan West 1, Ochre River 1, Rhineland 1, St. Boniface 1, Whitemouth 1.

**Typhoid Fever:** Total 12—Winnipeg 3, Rhineland 2, Birtle Town 1, Brandon 1, Cornwallis 1. (Late reported, August: Portage City 1, Portage Rural 1, Shellmouth 1, Unorganized 1).

**Anterior Poliomyelitis:** Total 11—Mossey River 4, Rivers Town 2, Selkirk 1, Unorganized 1, Daly 1. (Late Reported, May: Louise 1; August: Unorganized 1).

**Erysipelas:** Total 8—Winnipeg 2, Charleswood 1, Fort Garry 1, Rosburn Rural 1, St. Boniface 1, St. Paul West 1, Whitewater 1.

**Measles:** Total 7—Winnipeg 2, Ethelbert 2, Brandon 1, Rhineland 1, Shell River 1.

**Trachoma:** Total 4—Birtle Town 3, Unorganized 1.

**Influenza:** Total 3—Winnipeg 1. (Late Reported, April: Morris Rural 1; July: Portage City 1).

**Diphtheria Carriers:** Total 2—Winnipeg 2.

**Puerperal Fever:** Total 2—Swan River Rural 2.

**German Measles:** Total 1—St. Boniface 1.

**Venereal Diseases:** Total 103—Gonorrhoea 78, Syphilis 25.

## DEATHS FROM ALL CAUSES IN MANITOBA for the Month of August - 1935

**URBAN**—Cancer 36, Tuberculosis 13, Puerperal 5, Pneumonia 4, Syphilis 2, all others under 1 year 2, all other causes 127, Stillbirths 17. Total 206.

**RURAL**—Cancer 32, Tuberculosis 13, Pneumonia 7, Infantile Paralysis 3, Undulant Fever 3, Puerperal 2, Influenza 1, Lethargic Encephalitis 1, Erysipelas 1, Syphilis 1, all others under 1 year 6, all other causes 126, Stillbirths 10. Total 206.

**INDIANS**—Tuberculosis 11, Pneumonia 2, Measles 1, Syphilis 1, all others under 1 year 2, all other causes 13, Stillbirths 1. Total 31.

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## Correspondence

*To the Editor*

*Manitoba Medical Association Review*

**Re: "The Hospitals and Nursing Journal"**

We beg to advise you that the Manitoba Association of Registered Nurses have no connection with the above periodical which is published from time to time, in the City of Winnipeg.

No other organized nursing group in Winnipeg is in any way connected with this Journal.

The only official Organ of Registered Nurses in Canada is the "Canadian Nurse," which is published monthly in Montreal, by the Canadian Nurses Association.

(MRS.) STELLA GORDON-KERR, Reg. N.,  
Secretary, Manitoba Association  
of Registered Nurses.

## ARE CHEAP SPECTACLES INEXPENSIVE IN THE LONG RUN?

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It has always been Ramsay's policy to put accuracy and quality before considerations of price, and they affirm that this is the correct policy in Ophthalmic Dispensing. A cheap dispensing service is often expensive in the end to the Eye Physician, dependent as he is in no small measure on the trust-worthiness of the Optician who dispenses his prescriptions, and who may easily jeopardize his relationship with his patient often without his knowledge.

Economic conditions have brought about a demand for cheapness in spectacles, as in other articles of commerce, and Ramsay's have met this demand, but in the high grade Ophthalmic Dispensing, where hand-made spectacles are required, it is false economy for prices to be set below a level that will not allow for the employment of the expert labour essential in such specialized work.

The cost of the materials used in the manufacture of spectacles and lens production is small compared with that of the labour entailed; the skilled craftsmen, the expensive machinery. These are factors that cannot be obtained cheaply without adversely affecting accuracy.

Ramsay's cannot obviously be the arbiters in this question. They are content to leave it to the Eye Physician who can easily satisfy himself on the point by the comparison of prices in conjunction with the quality of the spectacles.

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## Medical Library University of Manitoba

A summary of the contents of some of the journals available for practitioners, submitted by the Faculty of Medicine of the University of Manitoba. Compiled by T. E. HOLLAND, B.Sc., M.D. (Man.), F.R.C.S. (Edin.).

"The Practitioner"—October, 1935.

This number is a special one dealing with Recent Advances in Treatment. The following list of articles indicates how well the field of medicine has been covered.

"Modern Tendencies in Treatment"—by J. A. Gunn, M.D., D.Sc., F.R.C.P., Professor of Pharmacology, University of Oxford.

"Recent Advances in Dietetics"—by S. J. Cowell, M.A., M.B., F.R.C.P., Professor of Dietetics, University of London.

"Neurology and General Medicine"—by Edwin Bramwell, M.D., F.R.C.P., Emeritus Professor of Clinical Medicine, University of Edinburgh.

"Recent Advances in the Treatment of Nervous Diseases"—by Macdonald Critchley, M.D., F.R.C.P., Physician to Out-Patients, National Hospital, Queen Square.

"Recent Advances in Treatment associated with the Endocrine Glands"—by Kenneth E. Harris, M.A., M.D., F.R.C.P., Physician, University College Hospital and the Royal Chest Hospital.

"Recent Advances in Treatment of Gastro-Intestinal Disorders"—by A. H. Douthwaite, M.D., F.R.C.P., Physician, Guy's Hospital.

"Advances in the Treatment of Kidney Disease"—by T. Izod Bennett, M.D., F.R.C.P., Physician with Charge of Out-Patients, Middlesex Hospital.

"Recent Advances in the Treatment of Diabetes"—by George Graham, M.D., F.R.C.P., Physician, St. Bartholomew's Hospital.

"Some Recent Advances in Gynaecology"—by Eardley Holland, M.D., F.R.C.P., F.R.C.S., F.C.O.G., Obstetrical and Gynaecological Surgeon, London Hospital.

"Recent Advances in Treatment of Diseases of Children, including Immunization Methods"—by Alan Moncrieff, M.D., F.R.C.P., Physician to the Children's Dept., Middlesex Hospital.

"Recent Advances in Treatment of Diseases of the Skin"—by John T. Ingram, M.D., M.R.C.P., Physician in Charge of the Skin Department, The General Infirmary, Leeds.

"Advances in Treatment of Venereal Diseases"—by Robert Lees, M.B., F.R.C.P.E., Clinical Tutor, Venereal Disease Dept., Edinburgh Royal Infirmary.

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"Recent Advances in Urology" — by Alex E. Roche, M.A., M.D., M.Ch., F.R.C.S., Asst. Genito-Urinary Surgeon, The West London Hospital.

"Recent Advances in the Treatment of Fractures"—by A. J. Cokkinis, M.B., B.S., F.R.C.S., Asst. Director, Special Clinic, St. Mary's Hospital.

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"New Anaesthetic Agents and Methods" — by F. B. Parsons, M.D., M.R.C.P., Anaesthetist, Adenbrooke's Hospital, Cambridge.

"Annals Of Surgery"—September, 1935.

"Thermal Burns"—by John Gunn, F.R.C.S. (C), and John A. Hillsman, M.D., Ch.M. From the Dept. of Surgery, University of Manitoba School of Medicine.

—This comprehensive article reviews the literature very extensively and includes an excellent description of the pathology and the clinical course in burn cases. The patient's condition is seen to be due to a sequence of events including: Shock—primary and secondary, concentration of the blood by fluid loss, and toxæmia—of both protein and bacterial origin. Treatment is described with careful detail.

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"The Edinburgh Medical Journal"—October, 1935.

"Extensive Burns and Scalds"—by W. C. Wilson, F.R.C.S. (Ed.), Hon. Surgeon, Royal Hospital for Sick Children, Edinburgh.

—This article differentiates between initial and secondary shock and supports the contention that the acute toxæmia is not caused by concentration of the blood, fluid loss, early bacterial infection, or changes in blood chemistry, but by the action of circulating toxins formed at and absorbed from the burned area. The main action of these toxins is seen to be in the liver cells. The toxic action is increased if infection develops in the burned area.

"Some Comments on the Findings of the Maternal Mortality Report, with Special Reference to Failed Forceps Cases"—by Dr. Charlotte Douglas, Dept. of Health for Scotland.

—During the period 1929-1935 full reports have been received of 2,527 deaths during pregnancy. Reports of all births in Scotland, to the number of 39,205 during a period of six months, were also obtained. An analysis of these two groups of cases forms the basis for this very instructive article.

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"The Clinical Journal"—October, 1935.

"Blood Pressure"—by K. Douglas Wilkinson, O.B.E., M.D., F.R.C.P., Birmingham.

"Malignant Tumours of Bone"—by Harry Platt, M.S., F.R.C.S., Orthopaedic Surgeon, Manchester Royal Infirmary.

—A number of radiographs and photographs are included. (The article is to be concluded in the next issue).

"Diseases of Colon"—by Nels L. Eckhoff, M.S., F.R.C.S., Guy's Hospital.

"Sycoosis and its Treatment"—by J. Beatty, M.D., M.R.C.P., Dermatologist, Royal Infirmary, Cardiff.

"The Clinical Significance of Certain Urological Symptoms"—by Vernon Pennell, M.A., M.B., F.R.C.S., Surgeon, Addenbrooke's Hospital, Cambridge.

"The Treatment of Osteo-Arthritis"—by N. Ross Smith, M.B., Ch.M., F.R.C.S., Bournemouth.

"The 'Load Test' for Hernia"—by H. C. Wardleworth Nuttall, F.R.C.S., Liverpool Royal Infirmary.

"Kraurosis Vulvae treated with Oestrin"—by P. M. F. Bishop, B.M., B.Ch., Guy's Hospital.

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"The New England Journal of Medicine"

—October 17th, 1935.

"Muscle Grafts for Haemostasis in General Surgery"—by Howard M. Clute, M.D.

—The value of muscle grafts for controlling haemorrhage in such cases as thyroid remnants, pelvic operations for adherent tumors, and tears in Vena Cava is shown.

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